

Remarks/Arguments

Objections to the Specification

Paragraphs [0026] and [0027] have been amended to address the objections regarding paragraph [0027].

Paragraphs [0032], [0037], and [0038] have been amended to provide antecedent basis for electronic switching circuitry, conformal coating, and first and second materials.

Applicants courteously request that the objections be removed.

Objections to the Claims

Claim 12 has been amended to spell out “electromagnetic.” Applicants courteously request that the objection be removed.

The Rejection of Claims 13 and 16 Under 35 U.S.C. §112

The Examiner rejected Claims 13 and 16 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Claim 12 recites “EM.” Claim 13 has been amended to recite “EM” rather than “EMI.” Claim 13 depends from Claim 12, therefore, there is sufficient antecedent basis for the limitation of “EM” in Claim 13.

Applicants have amended Claim 16 to address the Examiner’s concerns.

Applicants respectfully submit that these amendments overcome the rejection under 35 U.S.C. §112, and reconsideration is requested.

The Rejection of Claims 1-5, 8, 11, 16, and 17 Under 35 U.S.C. §102(b)

The Examiner rejected Claims 1-5, 8, 11, 16, and 17 under 35 U.S.C. §102(b) as being anticipated by United States Patent Number 4,643,653 (Masaka et al.). Applicants respectfully traverse the rejection.

Masaka does not teach a housing with integral inlet and outlet ports

Amended Claim 1 recites: “a housing arranged to house said pump and said coil, said housing comprising an integral inlet port; and, an end cap with an integral outlet port.” Figures 2A and 4 identify inlet port 26: “Integral inlet mount 27 is provided for connecting pump 20 to a fuel source via a fuel line (not shown) and *further comprises inlet port 26* (See Figure 4).” (emphasis added, page 6, lines 17 and 18). Figure 4 is a cross-section of present invention pump 20 and clearly shows that body 22, mount 27, and port 26 are formed of a single piece of material. Figures 2A and 4 also show end cap 30 and outlet mount 29 with integral outlet port 28. Figure 4 clearly shows that end cap 30 and outlet mount 29 with integral outlet port 28 are formed of a single piece of material.

The Examiner has cited Figure 2 of Masaka to support the rejection. The Examiner has identified portions 11a and 12a in Figure 2 of Masaka as the ports, but Masaka has defined parts 13 and 14 as the ports: “Pipes 13 and 14 constituting *fluid outlet and inlet ports* are brazed at the centers of the cylindrical portions 11a and 12a.” (emphasis added, col. 3, lines 33-35). Masaka identifies pipes 13 and 14 as the ports, not portions 11a and 12a. Further, Masaka teaches that pipes 13 and 14 are each separate from and brazed to portions 11a and 12a, respectively. That is, pipes 13 and 14 are not integral to any other portion of Masaka’s pump.

Masaka does not teach integral inlet and outlet ports, therefore, Masaka does not anticipate Claim 1. Claims 2 through 5, 8, 11, 16, and 17, dependent from Claim 1, enjoy the same distinction from Masaka. Applicants courteously request that the rejection be removed.

Rejection of Claims 6 and 9 under 35 U.S.C. §103(a)

The Examiner rejected Claims 6 and 9 under 35 U.S.C. §103(a) as being unpatentable over United States Patent Number 4,643,653 (Masaka et al.). Applicants respectfully traverse the rejection.

Applicants have shown that Claim 1 is novel with respect to Masaka since Masaka does not teach integral inlet and outlet ports. Nor does Masaka suggest or motivate integral inlet and

outlet ports. In fact, as shown *supra*, Masaka teaches against integral inlet and outlet ports by expressly teaching that the ports are separate components brazed to a body or wall of the pumps. “A *prima facie* case of obviousness can be rebutted if one of the cited references teaches away from the claimed invention. See *In re Geisler*, 43 U.S.P.Q. 2d 1362, 1366 (Fed. Cir. 1997).” The Examiner’s arguments regarding an integral nipple for an inlet or outlet port do not cure the defects of Masaka regarding Claim 1.

Claim 1 is patentable over Masaka. Claims 6 and 9, dependent from Claim 1, enjoy the same distinction with respect to Masaka. Applicants courteously request that the rejection be removed.

Rejection of Claims 7, 10, and 19 under 35 U.S.C. §103(a)

The Examiner rejected Claims 7 and 10 under 35 U.S.C. §103(a) as being unpatentable over United States Patent Number 4,643,653 (Masaka et al.) in view of United States Patent Number 4,306,842 (Masaka). Applicants respectfully traverse the rejection.

Applicants have shown that Claim 1 is novel with respect to Masaka et al. since Masaka et al. does not teach integral inlet and outlet ports. Nor does Masaka et al. suggest or motivate integral inlet and outlet ports. In fact, as shown *supra*, Masaka et al. teaches against integral inlet and outlet ports by expressly teaching that the ports are separate components brazed to a body or wall of the pumps. “A *prima facie* case of obviousness can be rebutted if one of the cited references teaches away from the claimed invention. See *In re Geisler*, 43 U.S.P.Q. 2d 1362, 1366 (Fed. Cir. 1997).”

Masaka does not cure the defects of Masaka et al. regarding Claim 1. In fact, the Examiner has stated that Masaka teaches that removable (non-integral) parts are preferable: “However, Masaka' 842 teaches an electromagnetic pump similar to Masaka's 653, wherein an insert inlet port 23 comprises threads in order to easily remove/replace. Therefore, as taught by Masaka'842, it would have said insert in case of failure or maintenance been obvious to one of ordinary skill in the art at the time the invention was made to have replaced Masaka's 653 inserts by Masaka's 842 inserts in order to easily remove/replace said inserts in case of failure or

maintenance. See particularly Figure 2 of Masaka' 842," (Office Action, item 10, pages 6 and 7). Thus, the Examiner has stated that Masaka teaches away from the integral construction recited in Claim 1. "A *prima facie* case of obviousness can be rebutted if one of the cited references teaches away from the claimed invention. See *In re Geisler*, 43 U.S.P.Q. 2d 1362, 1366 (Fed. Cir. 1997)."

Claim 1 is patentable over Masaka et al. and Masaka. Claims 7 and 10, dependent from Claim 1, enjoy the same distinction with respect to the cited references. Applicants courteously request that the rejection be removed.

Claim 19

Masaka does not teach insert and outlet ports threaded to insert and remove nipples

Claim 19 recites: "wherein a first piece of said two piece housing comprises a threaded insert inlet port and a second piece of said two piece housing comprises a threaded insert outlet port; said threaded insert inlet and outlet ports comprising a second material *and wherein said inlet port and said outlet port are adapted for threadably inserting and removing threaded nipples.*" (emphasis added). The present invention specification describes the threaded ports as follows: "Figure 2b illustrates pump 90 configured to comprise threaded inlet 92 and threaded outlet ports 94 adapted for threadably inserting and removing threaded nipples 96 from housing 22 as may be desired, as for instance, to change the size of the nipples." Thus, inlet 92 and outlet port 94 are configured so that nipples 96 can be attached with threaded connections on the nipples.

In contrast, Masaka teaches that pipes 45 and 46 are attached to fixtures 23 and 24 with pressure, brazing, swage, or other non-threaded arrangements. (col. 5, lines 37-40). Figure 2 of Masaka shows that fixtures 23 and 24 are threaded for attachment to the body of the pump, but that no such threaded arrangement is used for the pipes. Nor does Masaka suggest or motivate such a threaded arrangement for the pipes.

Masaka fails to teach, suggest, or motivate all the elements of Claim 19. Therefore, Masaka fails to establish a *prima facie* case of obviousness with respect to Claim 19. Applicants courteously request that the rejection be removed.

Rejection of Claims 1-14 and 16-18 under 35 U.S.C. §103(a)

The Examiner rejected Claims 1-14 and 16-18 under 35 U.S.C. §103(a) as being unpatentable over United States Patent Number 4,306,842 (Masaka). Applicants respectfully traverse the rejection.

Masaka teaches against integral construction

Amended Claim 1 recites: “a housing arranged to house said pump and said coil, said housing comprising an integral inlet port; and, an end cap with an integral outlet port.” Figures 2A and 4 identify inlet port 26: “Integral inlet mount 27 is provided for connecting pump 20 to a fuel source via a fuel line (not shown) and *further comprises inlet port 26* (See Figure 4).” (emphasis added, page 6, lines 17 and 18). Figure 4 is a cross-section of present invention pump 20 and clearly shows that body 22, mount 27, and port 26 are formed of a single piece of material. Figures 2A and 4 also show end cap 30 and outlet mount 29 with integral outlet port 28. Figure 4 clearly shows that end cap 30 and outlet mount 29 with integral outlet port 28 are formed of a single piece of material.

Masaka only teaches inlet and outlet ports that are separate from the body of the pump: “The inlet and outlet fixtures 23 and 24 are provided with pipes 45 and 46 for connecting the inlet passage 23b and the outlet passage 24b of respective fixtures 23 and 24 to the usual associated elements.” (col. 5, lines 37-40). As shown in Figure 2, the fixtures and pipes are each a separate component. Masaka does not teach, suggest, or motivate any other arrangement. “A *prima facie* case of obviousness can be rebutted if one of the cited references teaches away from the claimed invention. See *In re Geisler*, 43 U.S.P.Q. 2d 1362, 1366 (Fed. Cir. 1997).”

The Examiner has stated that Masaka teaches that non-integral construction is preferable

The Examiner has stated that Masaka teaches that removable (non-integral) parts are preferable: “However, Masaka' 842 teaches an electromagnetic pump similar to Masaka's 653, wherein an insert inlet port 23 comprises threads in order to easily remove/replace. Therefore, as taught by Masaka'842, it would have said insert in case of failure or maintenance been obvious to one of ordinary skill in the art at the time the invention was made to have replaced Masaka's 653 inserts by Masaka's 842 inserts in order to easily remove/replace said inserts in case of failure or

maintenance. See particularly Figure 2 of Masaka' 842," (Office Action, item 10, pages 6 and 7). Thus, the Examiner has stated that Masaka teaches away from the integral construction recited in Claim 1.

The Examiner has applied impermissible hindsight

"When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references and the teachings of the references can be combined only if there is some suggestion or incentive to do so. *In Re Lee*, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002), citing *In re Fine*."

The Examiner has stated that replacing the multi-component arrangement for inserts and pipes taught in Masaka with integral components would be merely an "engineering choice." However, the Examiner has failed to provide the motivation for Masaka to replace his multi-piece design with an integral configuration. In item 10, the Examiner has argued that Masaka teaches that non-integral (for example, replaceable) parts are preferred. This is the complete opposite of the limitations recited in Claim 1.

It is clear that it would not be obvious to replace the discrete parts of Masaka with integral parts if such a replacement increases cost or complexity. In fact, an increase in cost or complexity clearly teaches against such a change. It is clear from the figures and written description in Masaka that the body and ports of Masaka's pump are made of metallic material. For example, projections 18a, 18b, 19a and 19c must be of a flexible, metallic material in order to bend and hold as shown in the figures and described in the specification, for example, in col. 5, lines 52-55. Also, the orthogonal planes and folds of the body are typical of a metallic body. However, replacing the separate inserts and pipes in Masaka with integral metal parts is not a mere "engineering choice," since such a replacement would involve significant increases in the cost and complexity of forming the parts. Specifically, for example, casting or molding of powdered metals or machining would be needed to form an integral insert 23 and pipe 45. All of these processes would be far more expensive and complicated than using the multiple parts taught by Masaka.

The use of integral inlet and outlet ports in Masaka is not an obvious engineering choice

The courts have not universally held that the use of one piece construction is a matter of obvious engineering choice, see *Schenck v. Nortron Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983). Further, the court affirmed the rejection in *In re Larsen* for a specific configuration and in a specific situation. Applicants respectfully note that the Examiner has not provided any substantiation that the integral construction recited in Claim 1 would be an obvious engineering choice. First and foremost, an 'engineering choice' cannot involve significant increase in the cost or complexity associated with the choice. As noted *supra*, the body and ports of Masaka's pump are made of metallic material and making the body and ports integral would be far more expensive and complicated. Therefore, for example, making insert 23 and pipe 45 of a single, integral piece of metal would not be a mere engineering choice. If anything, the structure shown by Masaka teaches against making insert 23 and pipe 45 integral.

Claim 1 is patentable over Masaka. Claims 2-14 and 16-18, dependent from Claim 1, enjoy the same distinction from Masaka. Applicants courteously request that the rejection be removed.

The Objection of Claim 15 as Being Dependent Upon a Rejected Base Claim

Claim 15 was objected to as being dependent upon a rejected base claim, but the Examiner indicated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants have shown that Claim 1 is allowable. Therefore, Claim 15, dependent from Claim 1, is not dependent from a rejected base claim. Applicants courteously request that the objection be removed.

Conclusion

Applicants respectfully submit that all pending claims are now in condition for allowance, which action is courteously requested.

Respectfully submitted,



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Dated: December 20, 2005